[0087] In the above-stated structure, pairs of the second through fifth lens elements **602**, **603**, **604**, and **605** and pairs of the sixth through ninth lens elements **606**, **607**, **608**, and **609** have not only horizontal parallaxes, but also vertical parallaxes. Therefore, depth information may be extracted not only in a horizontal direction, but also in a vertical direction. Here, the sixth through ninth lens elements **606**, **607**, **608**, and **609** are disposed at the outermost locations, such that distances between the sixth through ninth lens elements **606**, **607**, **608**, and **609** providing a telescopic zoom function are the largest. Furthermore, resolutions of five images having a first angle of view obtained via the first through fifth image pickup regions **611**, **612**, **613**, **614**, and **615** may be improved by using the super resolution technique, and resolutions of four images having a second angle of view obtained via the sixth through ninth image pickup regions **616**, **617**, **618**, and **619** may be improved by using the super resolution technique. Furthermore, by using the super resolution technique, an image may be smoothly processed when a digital zoom function for generating an image having an angle of view between a first angle of view and a second angle of view is performed.

[0088] FIG. **7** is a schematic diagram showing a structure of an image pickup apparatus **700** according to another exemplary embodiment. Referring to FIG. **7**, the image pickup apparatus **700** includes first through third lens elements **701**, **702**, and **703** having a first diameter and fourth and fifth lens elements **704** and **705** having a second diameter larger than the first diameter. Therefore, the first through third lens elements **701**, **702**, and **703** have the same F number, whereas the fourth and fifth lens elements **704** and **705** have the same F number. Furthermore, the F number of the fourth and fifth lens elements **704** and **705** is smaller than the F number of the first through third lens elements **701**, **702**, and **703**. Although not shown, same as in the above-stated exemplary embodiment, sizes of image pickup regions respectively corresponding to the first through third lens elements **701**, **702**, and **703** may be larger than sizes of image pickup regions respectively corresponding to the fourth and fifth lens elements **704** and **705**.

[0089] According to the exemplary embodiment, the first through third lens elements **701**, **702**, and **703** are linearly disposed in a horizontal direction (a first direction), whereas the fourth and fifth lens elements **704** and **705** are linearly disposed in a vertical direction (a second direction perpendicular to the first direction), when viewed from a rear, front, or surface of the image pickup apparatus **700**. In this example, the fourth lens element **704** is disposed below the first through third lens elements **701**, **702**, and **703**, whereas the fifth lens element **705** is disposed above the first through third lens elements **701**, **702**, and **703**.

[0090] In the above-stated structure, because the first through third lens elements **701**, **702**, and **703** have parallaxes in a horizontal direction, depth information in a horizontal direction may be extracted by using three images obtained via the first through third lens elements **701**, **702**, and **703**. Furthermore, because the fourth and fifth lens elements **704** and **705** have a parallax in a vertical direction, depth information in a vertical direction may be extracted by using two images obtained via the fourth and fifth lens elements **704** and **705**.

[0091] Furthermore, images having a first angle of view may be obtained via the first through third lens elements **701**, **702**, and **703**, whereas image having a second angle of view narrower than the first angle of view may be obtained via the fourth and fifth lens elements **704** and **705**. Here, resolutions of the three images having the first angle of view obtained via the first through third lens elements **701**, **702**, and **703** may be improved by using the super resolution technique, and resolutions of the two images having the second angle of view obtained via the fourth and fifth lens elements **704** and **705** may be improved by using the super resolution technique. By using the super resolution technique, an image may be smoothly processed when a digital zoom function for generating an image having an angle of view between a first angle of view and a second angle of view is performed.

[0092] It should be understood that exemplary embodiments described herein should be considered in a descriptive sense only and not for purposes of limitation. Descriptions of features or aspects within each exemplary embodiment should typically be considered as available for other similar features or aspects in other exemplary embodiments.

[0093] While one or more exemplary embodiments have been described with reference to the figures, it will be understood by those of ordinary skill in the art that various changes in form and details may be made therein without departing from the spirit and scope as defined by the following claims.

1. A mobile device comprising:
- a first lens element having a first aperture;
- a second lens having a second aperture larger than the first aperture;
- a first sensor of a first size, the first sensor being disposed in correspondence to the first lens; and
- a second sensor of a second size smaller than the first size, the second sensor being disposed in correspondence to the second lens,
- wherein the first lens and the second lens are disposed in a same side of the mobile device,
- the first lens is configured to provide a wide angle zoom, and
- the second lens is configured to provide a telescopic zoom.

2. The mobile device of claim **1**, wherein the first sensor has a first pixel pitch, and
- the second sensor has a second pixel pitch smaller than the first pixel pitch.

3. (canceled)

4. The mobile device of claim **1**, wherein the first sensor is locationally separated from the second sensor.

5. The mobile device of claim **1**, wherein the mobile device is configured to extract depth information from images that are obtained via the first sensor and the second sensor.

6. A mobile device comprising:
- a first lens having a first aperture;
- a second lens having a second aperture larger than the first aperture;
- a first sensor of a first size disposed in correspondence to the first lens; and
- a second sensor of a second size smaller than the first size disposed in correspondence to the second lens,
- wherein the mobile device is configured to extract depth information from a first image obtained via the first lens and the first sensor and a second image obtained via the second lens and the second sensor.